

## **Abstract**

The present invention relates to a self-refresh apparatus and method. In the self-refresh method according 5 to the present invention, when a partial array self-refresh operation is performed on a bank, internal address is counted in a predetermined cycle corresponding to a refresh rate regardless of PASR types. The bank is selectively activated depending on the PASR types. As a result, errors 10 of the refresh rate which result from a half of bank or quarter of bank self refresh operation can be prevented.